Gnaphalium obtusifolium and its varieties may be distinguished as follows;

a. Stem with white, floccose tomentum, not visibly glandular ..... *G. obtusifolium.*
a. Stem glandular, not tomentose, or only slightly so. *b*
b. Stem glandular-puberulent; leaves usually linear or linear-lanceolate, 1.8–5.3 cm. long, 1.5–7 mm. wide, 6–10 times or more longer than wide; involucral bracts mostly acute ..... var. *micradenium.*
b. Stem glandular-villous; leaves usually oblong-lanceolate, 2.5–7 cm. long, 4–13 mm. wide, 4–7 times as long as wide; involucral bracts mostly obtuse ..... var. *Helleri.*

Gray Herbarium

VACCINIUM ULIGINOSUM AND ITS VAR. ALPINUM.

M. L. Fernald.

Vaccinium uliginosum L. is commonly treated as a circumpolar species which, in America, extends southward to the alpine and subalpine regions of New England and New York and bogs of Oregon. The plant of arctic-alpine range in North America has often been set off on account of its depressed habit and small thick leaves from the typical shrub of European bogs but in none of the differentiations have any characters been pointed out which seem to be more than responses to the exacting summer, and often winter, climatic conditions under which the plant grows in arctic and arctic-alpine eastern America. In comparing the shrub which abounds on the barrens of Greenland, Labrador and Newfoundland and the alpine regions of Quebec and northern New England with the typical European plant a number of points of seemingly real significance come out. In the first place the European is usually a larger and more ascending shrub, and its flowers and fruits are on slender pedicels 3–10 mm. or more long; while the smaller mostly depressed and smaller-leaved shrub of arctic-alpine American distribution has the pedicels very short and often almost obsolete, ranging from 0.1–3.5 mm. in length. In the European plant the horns of the anther are ascending and commonly shorter than the two tubules. This character is well shown in such detailed illustrations as Sturm, Deutschl. Fl. iii. t. 12 (1802), Svensk Botanik, v. t. 331 (1807), English Botany, ed. Syme, vi. t. 878 (1873) or Hartinger & Dalla Torre, Atlas der Alpenfl. iii. t. 313 (1884). Con-

trasted with the European, the shrub of eastern and arctic America has the horns considerably longer and more divergent or even somewhat deflexed at base, but occasionally, as in Greenland material illustrated by Warming,[1] they may be strongly ascending though much longer than the tubules. Reichenbach illustrates[2] the horns of the European shrub as equaling the tubules but such European specimens as the writer has been able to examine agree with those illustrated in the other European works above cited.

The decision whether the shrub of arctic-alpine American range should be treated as a distinct species or as a variety is difficult to reach without a fuller knowledge of the old world shrub and the variability of the horns of its anthers but it is at least a well marked American variety, the first satisfactory name for which seems to be *V. uliginosum*, var. *alpinum* Bigelow.[3] Bigelow first put forward the shrub of the alpine summits of New Hampshire as a species, *V. gaultherioides*[4], but he later considered it a variety of the European *V. uliginosum*.

During the study of the American material of *V. uliginosum* it has become apparent that the shrub of western North America which was separated in 1876 as *V. occidentale* Gray[5] is strikingly like many European specimens and plates of *V. uliginosum*, especially the narrower-leaved extreme of the European shrub. The fruit is commonly slightly smaller than in most European plants but the short ascending horns of the anthers are quite like those of European specimens. *V. occidentale* seems, then, to be essentially *V. uliginosum* of Europe, and the broader-leaved shrub of Oregon, Washington and British Columbia, as well as of the Lake Superior region, is likewise a good match for the European shrub.

The synonymy of var. *alpinum* is as follows:—

V. ULIGINOSUM L., var. ALPINUM Bigel. Fl. Bost. ed. 2: 153 (1824). *V. gaultherioides* Bigel. N. E. Journ. Med. v. 335 (1816). *V. pubescens* Wormsk. in Hornem. Fl. Dan. ix. 2, t. 1516 (1818). *V. salicinum* Cham. Linnaea, i. 525 (1826). *V. uliginosum*, γ *mucronatum* Herder, Pl. Radd. iv. 38 (1872); Gray, Syn. Fl. N. A. ii. pt. 1: 23 (1878). *V. uliginosum*, β. *pubescens* Lange, Consp. Fl. Grönl. 90 (1880) and

[1] Warming, Meddelelser om. Grönland, xxvi.—Repr. as The Structure and Biology of Arctic Fl. Pl. i. fig. 31 (1908).
[2] Reichenb. Ic. Fl. Germ. xvii. t. 1168, figs. iii, & iv. (1855).
[3] Bigelow, Fl. Bost. ed. 2: 153 (1824).
[4] Bigelow, N. E. Journ. Med. v. 335 (1816).
[5] Gray, Bot. Cal. i. 451 (1876).

subsp. *microphyllum* Lange, l. c. 91 (1880). *Myrtillus uliginosa*, var. *microphylla* (Lange) Simmons, Vasc. Pl. Ellesmld. 37 (1906). *M. uliginosa*, var. *pubescens* (Lange) Porsild, Meddel. om. Grönl. 1. 381 (1912).

Writers on Greenland plants maintain var. *pubescens* Lange (not *V. pubescens* Wormsk.) as a good variety, but southward the plants with glabrous and with more or less minutely pubescent foliage do not seem to be satisfactorily separable. In Newfoundland and on the mountains southward they are freely intermingled and can be separated only by a purely mechanical sorting of the two tendencies.

Gray Herbarium

REPORTS ON THE FLORA OF THE BOSTON DISTRICT,—XXXVIII.

This report includes a series of rough-fruited plants which have been introduced into Massachusetts, mainly in wool. These plants have come up as waifs, mostly around woolen mills. Some of them, like *Echium vulgare*, have been real introductions, and have persisted and spread in enough places to become a permanent part of our flora. Most of them, coming to us from the West, from South America, and from Europe and Asia, have not found conditions here favorable to reproduction. No Australian plant has yet been reported, but the rest of the wool-growing world is well represented.

It is interesting to note that these waifs are not found in the shoe manufacturing towns of Massachusetts. Their favorite haunt seems to be the country about some of the smaller woolen mills, where the wool waste has been spread on the land, instead of being dumped and burned, as is done in the larger places. Many waifs like these have already been reported in other families, especially *Leguminosae* and *Geraniaceae*.

The committee has been fortunate in having access to the W. P. Alcott collection of these plants at the Peabody Academy of Science in Salem. The committee wishes especially to express appreciation of the assistance given by Mr. J. F. Macbride and Mr. I. M. Johnston in the identification of some of the difficult species.